

Name:

Answers

Davis

out of 100 Basically
2pts each
6pts for #42
omit 3 questions

Directions: You may not use a calculator for any question on this test.

1. Evaluate $\cos B = \frac{a}{c}$

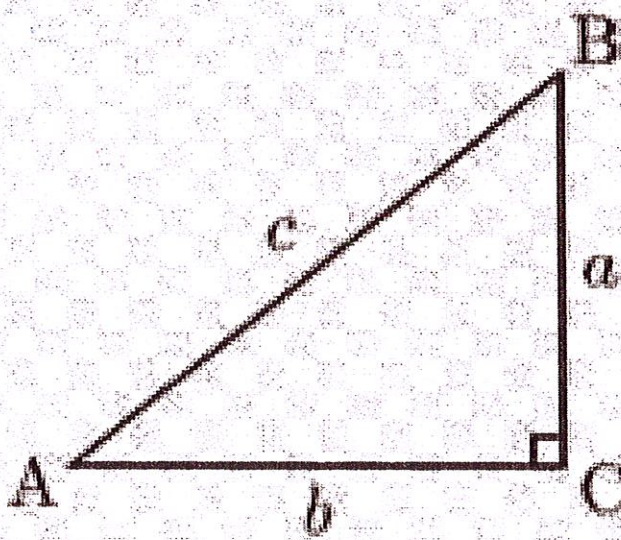
2. Evaluate $\tan A = \frac{a}{b}$

3. Evaluate $\csc B = \frac{c}{b}$

4. Evaluate $\sin A = \frac{a}{c}$

5. Evaluate $\sec A = \frac{c}{b}$

6. Evaluate $\cot B = \frac{a}{b}$



7. Complete the statement (fill in the blank): $\sin 52^\circ = \cos 38^\circ$

8. Convert $\frac{\pi}{6}$ to an angle measure in degrees. 30°

9. Convert 45° to an angle measure in radians, $\frac{\pi}{4}$

10. Convert $\frac{\pi}{2}$ to an angle measure in degrees. 90°

11. Convert 150° to an angle measure in radians. $\frac{5\pi}{6}$

12. Convert $\frac{2\pi}{3}$ to an angle measure in degrees. 120°

13. Convert 270° to an angle measure in radians. $\frac{3\pi}{2}$

14. Convert $\frac{11\pi}{6}$ to an angle measure in degrees. 330°

15. Convert 315° to an angle measure in radians. $\frac{7\pi}{4}$

16. Write $\cos 135^\circ$ in terms of a reference angle (answer with degrees) $-\cos 45^\circ$

17. Write $\sin \frac{7\pi}{4}$ in terms of a reference angle (answer with radians) $-\sin \frac{\pi}{4}$

18. Write $\csc 330^\circ$ in terms of a reference angle (answer with degrees) $-\csc 30^\circ$

19. Write $\cot \frac{7\pi}{6}$ in terms of a reference angle (answer with radians) $\cot \frac{\pi}{6}$

20. Write $\sec 240^\circ$ in terms of a reference angle (answer with degrees) $-\sec 60^\circ$

21. Write $\tan \frac{2\pi}{3}$ in terms of a reference angle (answer with radians) $-\tan \frac{\pi}{3}$

22. Write $\sin 95^\circ$ in terms of a reference angle

$$\sin 85^\circ$$

23. Write $\csc 195^\circ$ in terms of a reference angle

$$-\csc 15^\circ$$

24. Write $\cos 290^\circ$ in terms of a reference angle

$$\cos 70^\circ$$

25. Write $\cot 140^\circ$ in terms of a reference angle

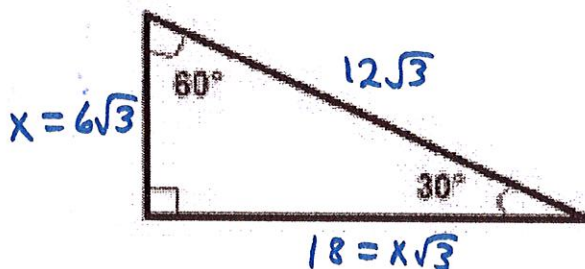
$$-\cot 40^\circ$$

26. Given the special triangle below with 18 inches as its longest leg length, find the lengths of the other two sides.

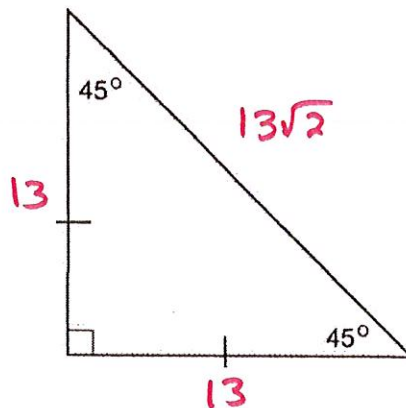
$$18 = x\sqrt{3}$$

$$\frac{18}{\sqrt{3}} = x$$

$$\frac{18\sqrt{3}}{3} = x$$



27. Given the special triangle below with $13\sqrt{2}$ cm as its hypotenuse length, find the lengths of the other two sides.



28. Evaluate the trigonometric expression $\sin \frac{\pi}{6} = \frac{1}{2}$

29. Evaluate the trigonometric expression $\cos 225^\circ = -\frac{\sqrt{2}}{2}$

30. Evaluate the trigonometric expression $\tan \frac{\pi}{4} = 1$

31. Evaluate the trigonometric expression $\csc 150^\circ = \frac{1}{\sin 150^\circ} = \frac{1}{\frac{1}{2}} = 2$

32. Evaluate the trigonometric expression $\tan \frac{\pi}{2} = \frac{1}{0} = \text{undefined}$

33. Evaluate the trigonometric expression $\sin 90^\circ = 1$

34. Evaluate the trigonometric expression $\cos \frac{2\pi}{3} = -\frac{1}{2}$

35. Evaluate the trigonometric expression $\cos 0 = 1$

36. Evaluate the trigonometric expression $\sin \pi = 0$

37. Evaluate the trigonometric expression $\csc \frac{5\pi}{3} = \frac{1}{\sin \frac{5\pi}{3}} = \frac{1}{-\frac{\sqrt{3}}{2}} = \frac{-2}{\sqrt{3}} = \frac{-2\sqrt{3}}{3}$

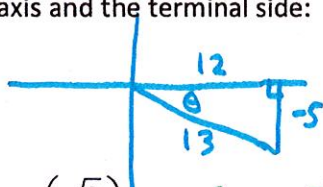
38. Convert $\frac{\pi}{15}$ to an angle measure in degrees. $\frac{180^\circ}{15} = 12^\circ$

39. Convert 140° to an angle measure in radians. $140^\circ \left(\frac{\pi}{180^\circ} \right) = \frac{14\pi}{18} = \frac{7\pi}{9}$

40. Convert $\frac{17\pi}{12}$ to an angle measure in degrees. $\frac{17(180^\circ)}{12} = 17 \cdot 15^\circ = 255^\circ$

41. Convert 310° to an angle measure in radians. $310^\circ \left(\frac{\pi}{180^\circ} \right) = \frac{31\pi}{18}$

42. A ray is rotated counter clockwise from the positive x-axis, and the terminal side passes through the point $(12, -5)$. Determine the six trigonometric ratios of the central angle θ formed by the x-axis and the terminal side:



$$\sin \theta = \frac{-5}{13}$$

$$\cos \theta = \frac{12}{13}$$

$$\tan \theta = \frac{-5}{12}$$

$$\csc \theta = \frac{-13}{5}$$

$$\sec \theta = \frac{13}{12}$$

$$\cot \theta = \frac{-12}{5}$$

43. $\sin^{-1}\left(\frac{\sqrt{3}}{2}\right) = 60^\circ \text{ or } \frac{\pi}{3}$

44. $\cos^{-1}\left(\frac{\sqrt{2}}{2}\right) = 45^\circ \text{ or } \frac{\pi}{4}$

45. $\sin^{-1}(1) = 90^\circ \text{ or } \frac{\pi}{2}$

46. $\cos^{-1}(-1) = 180^\circ \text{ or } \pi$

47. $\tan^{-1}(0) = 0^\circ \text{ or } 0$

48. $\tan^{-1}(-\sqrt{3}) = -60^\circ \text{ or } -\frac{\pi}{3}$

49. $\sin^{-1}\left(\frac{-1}{2}\right) = -30^\circ \text{ or } -\frac{\pi}{6}$

50. $\cos^{-1}\left(\frac{-1}{2}\right) = 120^\circ \text{ or } \frac{2\pi}{3}$